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How Successful is the Management of Technical and Vocational Institutions, Kuwait, in Reducing Dependence on Expatriates?

Salah Al-Ali

Professor, College of Technological Studies Kuwait, P.O. Box 261 Al-Surra, Post Code 45703, Kuwait

drsalali@yahoo.com

Abstract. There is a common perception that technical and vocational education is the ultimate solution for providing industries and business with skilled and semi-skilled manpower. It is considered as a dual type of education system that would allow students to transfer what they have learned in their schools and colleges into real work environment. It is a combination of education that encompasses theory and practice where students spend a certain time in industrial and business premises to acquire the needed knowledge, skills and attitudes. Due to the shortage of skilled and semi-skilled indigenous manpower, the gulf states (e.g., Kuwait, Qatar, United Arab Emirates) have forged technical and vocational education colleges and institutions with the aim to supply essential sectors of their economy (e.g., oil, electricity and water, health sector, infrastructure), with qualified national manpower able to manage, maintain, and adapt the imported technology to suite local environments. However, the success of technical and vocational institution in achieving an acceptable outcome would, to great extent, depend on the quality of the management of technical and vocational institutions. The fact is managing technical and vocational education is completely different from managing a formal education (e.g., formal colleges and universities). This research paper examines how successful is the management of technical and vocational colleges and institutions in providing local industries with indigenous skilled and semi-skilled qualified manpower. The research is based on extensive field work that encompasses a review of the related literature, interviews with sample of heads of supervisors/heads of departments at the Ministry of Health, Ministry of Communications, Ministry of Electricity and Water, and the oil sector in order to assess the quality of graduates from technical and vocational colleges and institutions. Finally, the research will argue that unless the management of technical and vocational colleges and institutions recognize and appreciate the value of building a strong linkage with local industries, its contribution in tackling the shortage of skilled and semi-skilled indigenous in essential sectors on the economy will be below the government expectations, thus continuing relaying on expatriates for years ahead.

Keywords. Technical and Vocational, developing Indigenous Manpower, Interaction between technical and vocational education and Local industries, Kuwait

[1] **Introduction:**

The importance of technical and vocational education is highly stress in related literature. In fact, there is a common understanding that technical and vocational education is completely different from formal education (e.g., formal colleges and universities). There is

also a common agreement among authors, observers, and writers that technical and vocational education is aim to prepare students to the world of work. Technical and vocational education is understood as consisting of education, training and skills development for different jobs (UNESCO, 2015), educational and training for careers knowledge and skills with the aim of social equity (IGI Global, 2021), providing students with practical skills, know-how, and understanding necessary for a specific job or trade (INEE, 2021), offering students the skills, knowledge, attitudes, ethics habits, and moral values that are in urgent need in the society (Ministry of Education, Youth & Information, 2021) and allowing student s to gain practical experience in their selected career pathway before even graduating from schools or colleges (Jens, 2021). Therefore, technical and vocational education can be simply defined as that dual type education system which provide students with the know-how and know-why that are in urgent need of industries and business.

Industrialists are not keen in searching or employing students who are graduating from a formal colleges and universities. They are eager for students who are already equipped with the level of skills, knowledge, and attitude that are already applied in their production methods and techniques. Industrialists focuses on those technical and vocational graduates who are ready gaining the require skills that enable them to adapt to work environments. The retraining of formal education graduates would indeed place a huge stress and cost on industries and business with no guarantee of the ability of formal education graduates to adapt and gain the necessary skills and attitudes that is in urgent need of industries and business. When employers searching for new graduates, they are interested in those graduates who can accomplished the assigned job on time (Jens, 2021), career readiness which is the key to ensure speed entrance into workforce market (NACE, 2021), people or students who are creatively approach problems and jobs (Deanna 2020), graduates who have not only a technical skill, but also thinking skills to easily adapt to work circumstances (Flores, et.al., 2012), ability to effectively communicate and exchange of information and data with others (Goutham, 2013), and employers require soft skills such as problem-solving skills, communications skills, organizational skills, interpersonal skills (Sodipo, 2014). This means that graduates must enhance and develop their skills, knowledge, and attitudes to respond to the continuing changing in industrial and business production diversity.

The global rapid change in science and technology have profound repercussions on the education system in various countries while focusing on reforming technical and vocational education system to respond to the demand of the application of advance production technology in industries and business. The implication of the constant changes in science and technology forced the leaders and the management of technical and vocational education to be more dynamic and vigilant to new labour market requirements. However, the success of technical and vocational education would depend, to great extent, on the quality of the leaders and the management in achieving overall technical and vocational objectives. In technical and vocational perspective, it is purely a top management responsibility to assign a qualified dean for managing a certain college or institute that he/she able to, thoroughly and practically, absorb the concept of technical and vocational education and its purposes. The fact is managing a technical and vocational education institutions is completely different from managing a formal education institution (e.g., formal colleges and universities). It is the main responsibility of those who manage technical and vocational institution to effectively and efficiently meet the requirements of industries. The fact is that technical and vocational institutional leaders play a vital role in ensuring that students have access to high-quality teaching and learning that can have a positive impact on student's skills they need (OECD, 2021), has a significant contribution on student's achievement and teachers working conditions (Ruiz-Valenzuela, et.

al., 2017), must be creative to ensure the continuation of teaching and learning during the outbreak of the Covid-19 pandemic (OECD, 2020), and improving the quality of technical and vocational education through the allocation of resources and provision of instructional guidelines (OECD, 2021), and can influence the motivation and capacities of teachers, as well as the school climates and environment (Nusche, 2009). Technical and vocational institutions cannot work within a “black box” nor depends on decisions of different governmental entities and key figures. The efforts to reform technical and vocational educational institutions would significantly contribute to a higher degree of autonomy. The management of technical and vocational education institutions is required to enhance their technical analytical managerial opportunities and strengthening their knowledge, skills and attitudes towards collaboration with industries. They must increase expectations in respect to corporation connections with industries and other sectors, agencies and organisations (Diann, 2003), facilitating graduate employability, updating occupational standards and reviewing programs, ensuring teachers training opportunities (Anita, 2019), provide support and encouragement to their staff, ensure the retention and progression of students OECD, 2021), held accountable for achieving the institution’s goals and efficiently managing its resources, (Greatbatch, et.al., 2018), effectively deliver quality education and training (International labour Organization, 2012), meeting internal (e.g. teachers, trainers, staff, students), and external (e.g. industries, business, communities), and achieve satisfactions with the quality of produced outcomes (Gisela, et. al., 2018). It is essential that managers or deans of technical and vocational institutions acquire interpersonal skills such as: acquiring necessary management skills, understanding and absorbing the concept of technical and vocational education, communications skills, marketing and negotiation skills with the recipient of graduates, problem solving skills, innovation and creativity skills, team work skills, ability to set and monitor an institution plan, closing the gap with industries skills, determining industrial needs analysis, evaluating graduates competencies, improving the quality of teaching and learning, enhancing the quality of workshops and laboratories, reviewing and updating curriculum, encouraging social participation in the institutional activities, appreciating the role of apprenticeship in enhancing the quality of graduates, promoting youth employments, and ensuring a safe and healthy learning and teaching environments. Technical and vocational education institutions must look for synchrony between with the world of work. The participation of industry and business in the management of technical and vocational education can provide a significant support in developing programs to produce the skills the labor market needs. (The World Bank, 2017) Education and training should be more responsive to labour market needs (Government of Netherlands, 2020). “Understanding the unique challenges that both sides, industry and education, has and then looking for those unique solutions, whether that the apprenticeship model...or work and learn models...”, (Jason, 2020)

The gulf states governments acknowledge the need to equipped indigenous manpower with the necessary knowledge, skills and attitude to enable them to work in local industries and business. The dependence rate on expatriates in the gulf states is high particularly in essential sector of their economy (e.g., oil and electricity and eater, health sector, infrastructure). The United Arab Emirates (UAE), like most of the gulf states relay heavily on expatriates’ manpower (nearly 90% of the population), in the Kingdom of Saudi Arabia, it is estimated that expat constitute over 10 million out of its population, and half in Oman and Bahrain. (Sabena, 2020) The current population of Kuwait in 2021 is 4,328,550 a 1.36% increase from 2020. Expatriates account for about 70% of Kuwaiti population, among which 1.1 million Arab expatriates and 1.4 million Asian expatriates. (World Population Review, 2021) Due to the outbreak of Covid 19 pandemic and its impact on jobs declines, the employment level would

expect to fall by at least 13%. For instance, in the Kingdom of Saudi Arabia, 1.2 million expats forecast to leave this year, and Kuwait planning to reduce expat numbers to 30% from its current 70% of the total populace. (Christopher, 2020) Decision makers in the gulf states have realized the urgent need to enhance indigenous capabilities by setting a plan to promote the availability of indigenous capabilities able to adapt, maintain, and manage the imported technology apply in local industries and business. Therefore, attention was diverted into technical and vocational education to respond to the need on skilled and semi-skilled national manpower particularly in essential sectors of the gulf states economy (e.g., oil and electricity and water, health sector, infrastructure). However, the success of technical and vocational education would depend on the management mentality in establishing an effective and fruitful collaboration with local industries and business. It is a management responsibility to identify and determine the level of knowledge, skills, and attitudes that are mostly required by the recipients of technical and vocational graduates. Kuwaiti key figures have appreciated the curial role of technical and vocational institutions in providing essential sectors of the economy with the skilled and semi-skilled indigenous manpower in order to reduce, to great extent, the dependence on expatriates. The Kuwaiti government has forged the Public Authority for Applied Education and Training, PAAE&T, in 1982 to respond to the urgent of essential sectors of the economy from semi and skilled indigenous manpower. The PAAE&T aims include interaction with major institutions in the labour market, training national manpower, joint research with local industries, and linking programs to society's needs and requirements. In another word, the Kuwaiti government attention is not only to prepare students to the world of work but also to closing the gap between technical and vocational institutions and local industries. The PAAE&T has five colleges and eight training centers. The aim of the PAAE&T is to **“to provide the national technical workforce that meets the requirements of social and economic development in terms of quantity and quality... and taking into account the general indicators of the needs of the labor market and the variables it carries that govern the labor market needs of graduates of applied colleges and training institutes”**. (The PAAE&T Website) The research focuses on the assessing the quality of the management of the selected colleges and institutions in providing industries with the required indigenous skilled and semi-skilled manpower. In addition to, measuring the success of the selected colleges and institutions in reducing dependence on expatriates. The selected colleges and institutions are: the College of Technological Studies, CTS, the College of Health Sciences CHS, the College of Nursing, CN, the Institute of Nursing, IN, the Higher Institute of Communications and Navigations, HIC&N, the Higher Institute of Energy, HIE, and the Sabah Al-Salem Industrial Institute, SSII, and the Shuwaikh Industrial Institute, SII. The selected industries are: the Ministry of Electricity & Water, The Ministry of Communications, the Ministry of Health, and the oil sector. It hopes that the results of this research would guide the management of the PAAE&T in setting and implementing an appropriate and an efficient plan that would contribute significantly in enhancing the quality of the its graduates. Thus, reducing the level of dependence on expatriates.

3. Research Objectives:

- a. To identify and examine the level of interactions between the selected colleges and institutions and the recipients of the PAAE&T graduates.
- b. To identify and examine the perception of the recipients of the PAAE&T graduates towards the quality of graduates from the selected colleges and institutions.

- c. To identify and examine those obstacles (if any) that might affect the quality of the PAAE&T graduates.
- d. Discussions and Recommendations.

The outcomes of the research would indeed guide the management of the selected colleges and institutions, to improve the quality of their graduates. In addition, enhancing the standard of academic staff and enrich their knowledge, skills and attitudes towards strong collaboration with the recipients of the PAAE&T graduates. Overall, achieving the PAAE&T objectives in providing the recipients of the PAAE&T graduates with skilled and semi-skilled indigenous manpower. Thus, reducing dependence on expatriates.

4. Materials and Methods

4.1 Design

This research consisted of a descriptive survey designed to identify and examine the type of interactions between the selected **colleges and institutions at the PAAE&T and the recipients of the PAAE&T graduates. The selected colleges and institutions at the PAAE&T are: the College of Technological Studies, CTS, the College of Health Sciences CHS, the College of Nursing, CN, the Institute of Nursing, IN, the Higher Institute of Communications and Navigations, HIC&N, the Higher Institute of Energy, HIE, and the Sabah Al-Salem Industrial Institute, SSII, and the Shuwaikh Industrial Institute, SII.** The selected recipients of the PAAE&T graduates are: the Ministry of Electricity & Water, The Ministry of Communications, the Ministry of Health, and the oil sector. The research focused on whether students acquired the necessary knowledge, skills and attitudes that are suitable to the recipients of the PAAE&T graduates. In addition to, examining the perception of the recipients of the PAAE&T graduates towards the quality of the PAAE&T graduates. The research focused on the requirements as well as the obstacles that may hinder the enhancement of the quality of teaching and learning at the PAAE&T as well as the methods for strengthen the linkage with the recipients of the PAAE&T graduates.

4.2 Sample

The research encompassed interviews with (6) heads of supervisors/heads of departments at each of the selected recipients of the PAAE&T graduates. The selected recipients of the PAAE&T graduates are: the Ministry of Electricity & Water, The Ministry of Communications, the Ministry of Health, and the oil sector.

The selected heads of supervisors/heads of departments have more than 20 years of working experience and have a direct contact with either the PAAE&T students who are attending field training programs and/or the PAAE&T graduates who are officially employed at the selected recipients of the PAAE&T graduates, five-six years ago until now. The research focuses on examining the perceptions of selected heads of supervisors/heads of departments towards the quality of the PAAE&T graduates who already working at the at the recipients of the PAAE&T graduates. Among the issues that were discussed are: attitudes towards working, the level of knowledge and skills, communication skills, the ability to deal properly with machines, devices, and tools, work ethics, work loyalty, understanding technical terms, and the ability to solve existing technical problems. Interviews were conducted with a sample of (10-15) graduates who are already working at the recipients of the PAAE&T graduates. The aim is to investigate and measure their views towards the quality of teaching and learning while they were attending the PAAE&T.

4.3 Instrumentation

The target population for this research consists of interviews with (6) heads of supervisors/ heads of departments at each of the recipients of the PAAE&T graduates. The selected recipients at the PAAE&T graduates are: the Ministry of Electricity & Water, The Ministry of Communications, the Ministry of Health, and the oil sector. The selected heads of supervisors have more that 20 years of working experience and having either direct contact with the PAAE&T students who are attending field training program and/or the PAAE&T graduates who are officially working at the recipients of the PAAE&T graduates, five -six years ago until now. The aim is to obtain an in-depth information on the quality of the PAAE&T graduates and the level of work readiness. Interviews were conducted with a sample of (10-15) graduates who are already working at the recipients of the PAAE&T graduates. The aim is to investigate and measure their views towards the standard of teaching and learning while they were attending the PAAE&T.

4.4 Statistics and Parameters

The statistics pertain to the sample. The parameters pertain to an entire population.

4.5 The research parameters/sample are as follows:

- a) Interviews were conducted with (6) heads of supervisors/heads of departments at each of the followings: Ministry of Electricity & Water, Ministry of Communications, Ministry of Health, and the oil sector.
- b) The selected colleges and institutions at the PAAE&T are: the College of Technological Studies, CTS, the College of Health Sciences CHS, the College of Nursing, CN, the Institute of Nursing, IN, the Higher Institute of Communications and Navigations, HIC&N, the Higher Institute of Energy, HIE, and the Sabah Al-Salem Industrial Institute, SSII, and the Shuwaikh Industrial Institute, SII.
- c) Interviews were conducted with a sample of (10-15) graduates who are already working at the recipients of the selected PAAE&T graduates.

5. Research Findings:

5.1 The Characteristic of the Research Sample.

Interviews were conducted with (6) heads of supervisors/heads of departments at each of the recipients of the PAAE&T graduates. The selected heads of supervisors/heads of departments have more that 20 years of working experience and having either direct contact with the PAAE&T students who are attending field training program and/or the PAAE&T graduates who are officially working at the recipients of the PAAE&T graduates, five-six years ago until now. The objective was to examine their perception towards several issues related to the quality of the PAAE&T graduates (e.g., communication skills, work loyalty and work ethics).

5.2 Measuring the level of collaboration between the selected colleges and institutions at the PAAE&T and the selected recipients of the PAAE&T graduates.

There is no doubt that the collaboration between both parties would indeed enhance the quality of the PAAE&T graduates. In addition to, improving the quality of the PAAE&T curriculum, laboratories and workshops, safety and health procedures and rules, field training program, students' evaluation scheme, and implementing joint committee. Technical and Vocational education provides employers with skilled and semi-skilled manpower at the same

time reducing the rate of unemployment specially among young generation. The rapid advancement of science and technology, particularly in production techniques and methods force technical and vocational education institutions to apply new learning and teaching techniques to respond to industrial needs and business requirements. On other hand, industries and business have to strengthen their relationship with technical and vocational education institutions in order to close the gap and thus enhance students and graduates' competencies in various field of production methods and techniques. The dynamics of relationship between technical and vocational education institutions and industries and business is highly stressed in related literature. (OECD, 2018, Australian Government Productivity Commission, 2021, Triki, 2008, Yorke and Knight, 2019) The contribution of a strong linkage between technical and vocational education and local industries and business is manifest itself in reducing rate of unemployment, particularly in youth unemployment (Simone 2020), enhancing students' knowledge and skills (The World Bank, 2017), and strengthening teachers' competencies and personality (OECD, 2021, Gabriela, 2016), reviewing and monitoring curriculum to respond to industrial needs (Bohmann, 2007), forming proper policy and strategy for future manpower needs analysis (Khawla 2011, Ministry of Education and Sports, 2019), enhancing and upgrading the learning process to be compatible with industrial requirements (OECD, 2021), and maintaining a strong partnership for ensuring a continuing future successful collaboration (Florinda, 2021). An effort has been exerted to interview selected heads of supervisors/heads of departments at the Ministry of Electricity & Water, Ministry of Communications, Ministry of Health, and the oil sector. The types of collaboration between both parties are revealed below.

Identifying types of collaborations between the selected colleges and institutions at the PAAE&T and the selected recipients of the PAAE&T graduates

Joint Efforts in:	Available	Not-Available
Creating Data Base		✓
Setting Plan/Action Plan		✓
Curriculum Review & Development		✓
Updating Workshops & Laboratories		✓
Setting Student's Evaluation Scheme		✓
Setting Criteria for Assessing Graduates		✓
Consultancy Committee		✓

Note: The above percentages are an approximate estimation obtained from the selected heads of supervisors/heads of departments at Ministry of Electricity & Water, Ministry of Communications, Ministry of Health, and the oil sector.



Joint Efforts in:	Available	Not-Available
Conducting Joint Research		✓
Joint Seminars	✓	
Health & Safety Protocol		✓
Needs Analysis		✓
Determining level of: Knowledge		✓
Level of Skills		✓
Level of Attitudes		✓
Joint Meetings		✓

Note: The above percentages are an approximate estimation obtained from the selected heads of supervisors/heads of departments at Ministry of Electricity & Water, Ministry of Communications, Ministry of Health, and the oil sector.

Joint Efforts in:	Available	Not-Available
Assessing Field Training Program		✓
Setting Criteria for HIE Students Enrollment		✓
Sharing Technological Information		✓
Inviting of Experts		✓
Participation in Inventions Exhibitions		✓
Exchange of Staff		✓
Visiting the Recipients of the HIE Graduates	✓	

Note: The above percentages are an approximate estimation obtained from the selected heads of supervisors/heads of departments at Ministry of Electricity & Water, Ministry of Communications, Ministry of Health, and the oil sector.

Selected heads of supervisors/heads of departments at selected recipients at the PAAE&T graduates have been interviewed and questioned on the types of linkage with the selected colleges and institutions. The research revealed no tangible evidence of an effective collaboration with the recipients of the PAAE&T graduates in various academic activities. Among the absent of significant aspects of collaboration were as follows:

a) The lack of data bank.

An effort has been made to identify whether the selected heads of supervisors/heads of departments have been approached by staff from the selected colleges and institutions for forging a data based. It is a crucial to established a data bank that would include names and contact numbers of those staff at the selected colleges and institutions who are responsible for teaching and training students to be ready to work at the recipients of the PAAE&T graduates. In addition to, gathering and storing relevant information and data regarding the number of students who are expected to be graduates from the PAAE&T in the near future and the number graduates who are already working at the selected recipients of the PAAE&T graduates. It is highly advisable that the PAAE&T have an access to the names and contact numbers of those who are supervising graduates at the selected recipients of the PAAE&T graduates to allow a free access to information and data regarding the quality of graduates. Regrettably, the findings of this research revealed that no data base or data bank have been allocated nor in the process of completion between both parties.

b) The lack of a plan and/or action plan.

An attempt has been made to investigate whether the selected heads of supervisors/heads of department shave a mutual plan set with the PAAE&T to ensure high quality of graduates. Indeed, it is considered highly significant to set a professional plan that embedded objectives that are focusing on how to improve the standard of students at the PAAE&T as well as on how to enhance graduates' competencies at the selected recipients of the PAAE&T graduates. A plan that consists of objectives that are realistic and measurable to allow both parties (the PAAE&T and the selected recipients of its graduate), to jointly review, monitor, and evaluate the standard of the PAAE&T graduates. Unfortunately, the findings of this research revealed that no indication of a professional joint plan and/or action plan that encompasses essential and realist objectives or aims that are related to reducing dependence on expatriates, especially at the recipients of the PAAE&T graduates, nor a plan that focuses on monitoring and assessing the quality of the PAAE&T graduates.

c) The lack of joint efforts in curriculum development.

It is well understandable that curriculum design, review, and monitoring in technical and vocational education is different from its counterpart in formal education (e.g., schools, colleges, universities). Technical and vocational education is described as a dual system type of education that comprises theory and practical work at employer workplace. There is no doubt that the contents of technical and vocational curriculum focus on determining the level of knowledge, skills, and attitude that are mostly needed by industries and business. Therefore, the contribution of industrial and business in reviewing, updating, and monitoring curriculum in technical and vocational education is one of most priority of those who are running technical and vocational institution. In another word, industrial and business have to be involved in assessing the quality of curriculum, particularly those skills and attitude which are in current practice at industrial and business work place. The success of technical and vocational education graduates would depend, to great extent, on the degree of industrial and business involvement

in setting practical and measurable criteria's in judging the quality of vocational graduates' competencies. The findings of this research indicated without doubt, that there are no efforts have been noted by both parties (the PAAE&T and the selected recipients of the PAAE&T graduates) to review, monitor, update, and evaluate the curriculum at the PAAE&T.

d) The lack of joint efforts in update the PAAE&T laboratories and Workshops.

Indeed, science and technology are in a rapid change and efforts to cope and deal with the advancement of technological machines, devices, monitors, and tool is extremely difficult. When heads of supervisors/heads of departments at the selected recipients of the PAAE&T graduates questioned whether the PAAE&T staff have contacted them for an advice for assessing and updating the types of machines, devices, monitors, and tools, the reply was negative "no". It is essential that students at the PAAE&T to practice on recent machines, devices, monitors, and tools that are compatible with the technical facilities at the selected recipients of the PAAE&T graduates. Indeed, this would encourage students to practice what they have been learned at the PAAE&T place into a real working environment. In addition to, strengthen the quality of the PAAE&T graduates since they would totally familiar with the use of the same machines, devices, monitors, and tools that are available at the selected recipients of the PAAE&T graduates.

e) The lack of joint efforts in setting student's evaluation scheme.

The selected recipients of the PAAE&T graduates must play a vital role with the PAAE&T in setting student's evaluation scheme that would contribute significantly in ensuring that students receive the right and relevant level of knowledge, skills, and positive attitudes that are in need by the recipients of the PAAE&T graduates. A joint effort to establish student's assessment performance scheme must be one of most importance priorities of the PAAE&T. The participation of the selected recipients of the PAAE&T graduates in forming those criteria related to the enhancement of the quality of the PAAE&T students would indeed ease the way to a high standard of graduates. The joint efforts in monitoring and adjusting student's performance criteria to respond to the advancement of technical machines and tools and production techniques and methods would reduce and/or overcome any obstacles that may occur when the PAAE&T graduates formally employed at the selected recipients of the PAAE&T graduates. When heads of supervisors/heads of departments questioned to indicate if there is a joint effort with the PAAE&T to forge student's evaluation scheme, the answer was negative "no".

f) The lack of joint efforts in assessing the quality of PAAE&T graduates.

It is highly recommendable that both parties participate in evaluating the standard of the PAAE&T graduates through joint committee. It is through such committee the heads of supervisors/heads of departments at the selected recipients of the PAAE&T graduates can provide a sincere and truly feedback on the competencies of the PAAE&T graduates while they are officially employed at the recipients of the PAAE&T graduates. In addition to, providing a useful information on the quality and accuracy of the level of knowledge, skills, and attitude that are acquired by the PAAE&T graduates. A more useful information and data can be also provided by the selected recipients of the PAAE&T graduates on the performance and attitudes of the PAAE&T students while there are on field training program. Despite the importance of such committee, no evidence has been allocated in respect to the existence of a joint committee between both parties (the PAAE&T and the selected recipients of the PAAE&T) to evaluate the quality of the PAAE&T graduates who are already employed at the recipients of the PAAE&T

graduates. The absent of a joint committee would, indeed, hinder the improvements of the quality of the PAAE&T graduates.

g) The lack of joint efforts in conducting joint research.

Research and development are highly importance in solving various issues concerning the quality of the PAAE&T graduates. A constant evaluation and monitoring of the competencies of the PAAE&T graduates through research and development would prevent and overcome any escalation or deficiencies that might occur during their present at the selected recipients of the PAAE&T graduates. The joint research and development between both parties would allow a free flow of significant information and data and permit a fruitful exchange of experiences. However, the findings of this research revealed a clear absent of a joint research and development activities that would have, if well organised and implemented, a significant positive impact on the quality of teaching, learning, and training of the PAAE&T graduates.

h) Joint efforts in conducting joint seminars.

A free exchange of information's and successful experiences between both parties would, without doubt, enhance the quality of students attending the PAAE&T and its graduates. An active joint seminar between both parties is viewed as one of most academic activities that would help in improving the quality of the PAAE&T graduates and in maintaining a strong relationship. Other aspects of strengthen collaboration can be also investigated to ensure free exchange of information and set a realistic recommendation for upgrading the standard of the PAAE&T graduates.

i) The lack of joint efforts in enhancing safety and health procedures and rules.

The constant use of machines and tools would expose students and graduates to a certain hazard if safety and health procedures and rules not properly applied and monitored. Therefore, students and graduates who attend the selected recipients of the PAAE&T graduates must be aware of the risk involved when working in a hazardous area. It is highly recommended that the PAAE&T cooperate positively with the selected recipients of the PAAE&T graduates to forge a safety and health procedures and rule. This would strength the relationship between both parties and protect the life of students and those who are already working at the selected recipients of the PAAE&T graduates

j) The lack of joint efforts in determining needs analysis.

The PAAE&T must be aware of the proximate number of those who should join the selected recipients of the PAAE&T graduates' sector in the near future. It is the responsibility of both the PAAE&T and the selected recipients of the PAAE&T graduates to forecast the need of graduates in different fields of speciality. The objective of determining need analysis is to help both parties in identifying the number of skilled and semi-skilled national manpower required by the selected recipients of the PAAE&T graduates in the coming years. Unfortunately, no sign of a collaboration between both parties in a joint effort to perform a proper manpower needs analysis nor in determining the number of graduate's that are required by the selected recipients of the PAAE&T graduates in the forthcoming years.

k) The lack of joint efforts in determining the level of knowledge, skills, and attitudes.

The selected recipients of the PAAE&T graduates are not interested in graduates who have extensive knowledge that are not relevant to their work techniques and methods. In addition to, avoiding those graduates who are not properly skilled to deal with the type of production machines and tools applied in their work activities. The recipients of the PAAE&T graduates reject those graduates who show negative attitudes towards working outdoor or dealing with machines and tools. Thus, both parties must consider an effective collaboration to determine the level of knowledge they are required for those graduates before their employment. In fact, technical and vocational education is a dual system type of education that concentrate on specific knowledge that students and graduates must acquire before enrolling at the selected recipients of the PAAE&T graduates' sector. It is the responsibility of the PAAE&T to open the gate for fruitful interaction with the selected recipients of the PAAE&T graduates' sector to agree on the current and future skills that graduates must obtained and able to practical in a real working environment. Attention must be also paid to students and graduates' attitudes since the recipients of the PAAE&T graduates require sincere and honest skilled and semi-skilled indigenous manpower who are truly eager to work at the selected recipients of the PAAE&T graduates' premises.

l) The lack of joint efforts in conducting joint meetings.

The management of the PAAE&T must consider forging a joint committee with the selected recipients of the PAAE&T graduates. It is an opportunity for both parties to meet and discuss relevant matters concerning their interest and aspiration in meeting the country overall manpower plan. A joint committee would allow a free transformation of information and data and secure a continuing of a strong relationship between both parties so that objectives can be accomplished.

m) The lack of joint efforts in forging a consultancy committee.

A joint consultancy committee between both parties would not only strengthen relationship but also open a new window for a better and a successful contribution in achieving short, medium, and long-range objectives that are embedded in the overall country's manpower plan

n) The lack of joint committee in evaluating field training program.

The existing of a joint committee that focus on assessing the quality of field training program is highly recommended. It would provide both parties with the actual information on student's real interaction with trainers and the ability to transfer what have been learned at the PAAE&T into a similar work environment. Lecturers and trainers can absorb student while they are present on field training program and speculate whether students are sincerely interested in working at the selected recipients of the PAAE&T graduates. It is also an opportunity for students to familiarise with the type of machines, devices, monitors, tool, and working environment that they would expect to work in the near future.

o) The lack of committee for setting criteria for PAAE&T students' enrolment.

It is preferable that the PAAE&T consider inviting a member from each of the recipient of its graduates in the selecting and interviewing committee for those who wishes to enrol at the PAAE&T. Their involvement would contribute is evaluating candidates' personality and attitude since the recipient of the PAAE&T graduates already have an extensive experience of

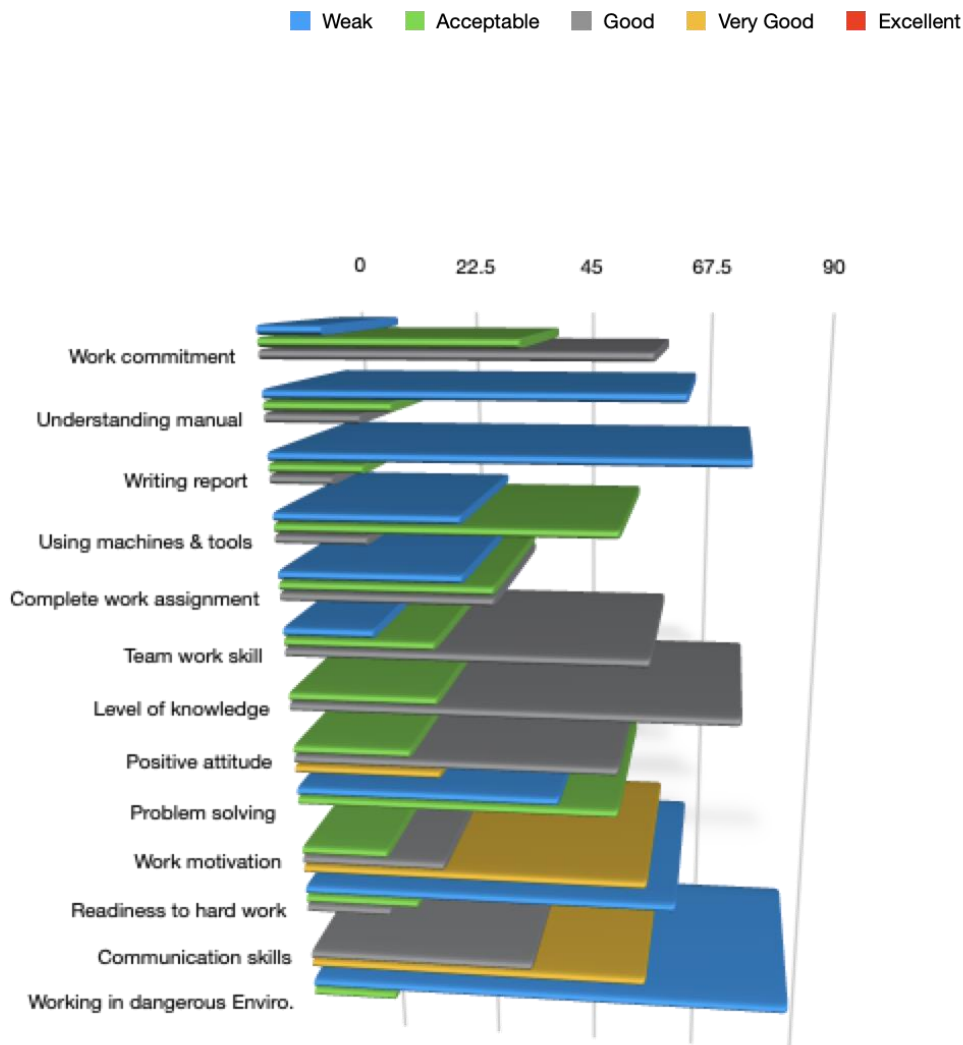
the PAAE&T graduates' personality and their real motive behind their willingness to employ at the selected recipients of the PAAE&T graduates.

p) The lack of exchange of technological Information.

The exchange of a free technological information between both parties would light a shade on new scientific and technological machines, devices, monitors, and tools fall into the interest of both parties. The creation of an information channels between both parties would close the gap and allow for the movement of new information, new learning and teaching techniques, exchange of lecturers and trainers, and establishing contact with external counterpart education and training institutions. It is worth mentioning at this point that, there is evidence of staff visiting from the PAAE&T to the recipients of the PAAE&T graduates to exchange information regarding field training program.

5.3 Examining the perception of the selected recipients of the PAAE&T graduates regarding the quality of PAAE&T graduates.

An attempt has been made to evaluate the quality of the PAAET graduates who are already working at the selected recipients of the PAAE&T graduates five-six years ago until now. Interviews have been conducted with selected heads of supervisors/heads of departments at the recipient of the PAAE&T graduates and the main results are showed below.



Industrial perception towards the quality of the College of Technological Studies graduates

It is well notable that graduates from the College of Technological Studies, CTS, lack essential skills regarding their area of specialty, since 65% of the graduates are incompetent in understanding or interpreting work manuals, 75% of the total unable to write a proper report, 65% of the total are not ready to handle work, 85% of the total are avoiding working in a dangerous environment. The selected supervisors voice concern about graduates' inability to complete assignment of time, inability to solve technical problems, and inability to use machines and tools since no "excellent or very good" rating is provided by the selected supervisors. In respect to communications skills, 60% of the graduates showed a "very good" rating as well as work motivation. Surprisingly enough, no "excellent or very good" rating is

provided to graduates for assessing the standard of knowledge acquisition in their field of specialty.

Quality of the College of Health Science Graduates "Pharmaceutical Sciences"		
Elements	%	Comments
Lack of Health Care Concept	60%	Patients Care
Lack of Communication Skills	60%	Doctors & Patients
Irresponsibility	60%	Lack of Work Value
Lack of Confidence	50%	Hesitation & Confusion
Inability to Prepare Medicine	55%	Lack of Skills
Lack of Interpersonal Skills	50%	Dealing with Frustrated Doctors and Patients
Unaware of Drug Interactions	60%	Lack of Knowledge & Skills
Lack of Details Orientation	65%	Lack of Skills

Quality of the College of Health Science Graduates "Pharmaceutical Sciences"		
Elements	%	Comments
Multitasking Skills	65%	Checking Expire Dates & Inventory Check
Lack Patients Advice Skills	50%	Medicane Usage Info.
Inability to Interpret Doctors Writings	70%	Lack of Skills
Lack of Computer Skills	70%	Checking Customer Details & Inventory
Lack of Knowledge	50%	Reading Skills
Lack of Work Ethics	50%	Privacy (HIV, Herpes, Depressive Illness)
Inability to Use Raw Materials	55%	Lack of Skills

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

The above findings indicates that 60% of the College of Health Sciences, CHS, graduates lack a thorough understanding and appreciation of the concept of caring for patients and probably patients relative. This was worsening by the irresponsible behaviour of 60% of those who showed minimal responsibility about their career. It is obvious that the majority of the CHS (50%-60%) need to acquire a communication skill that enable them to deal with doctors, patients, and colleagues. A special communication skill is highly required to control unacceptable behaviour may resulted from a frustration situation either from patients or their relatives. The majority of the CHS graduates (60%) lack of unawareness of drugs interactions

and dealing with medical raw materials when preparing a specific medicine. The research revealed that 65% of graduates lack an obvious skill in checking medicine inventory as well as ensuring the availability of the right number of medicines. In fact, graduates (60%) ignore or probably unaware on the importance of checking and removing expired medicine. They may rely on their supervisors or colleagues to take an active action. It is also notable that graduate's inability (70%) to use computer medical software to store or retrieve doctors or patient's data in an efficient manner. The CHS must ensure that graduates maintain high standard as patient's privacy is one of their priority tasks. Others must be aware of patient's illness such as HIV or desperation since this would have a significant side effect of patient's health and reputation.

The CHS must stress on enhancing graduate's knowledge, skills and attitudes in various area related to their career. Among the skills which need to be enhanced are: ability in understanding and interpreting doctors' writings, communication skills particularly with patients, respect work practice, stressing on work loyalty, enhancing work ethics, understanding how to prepare a medicine, medicine registration and documenting, strict examination scheme during studying at the CHS and while attending field training program, strict examination before enrolling at the CHS, ensuring sincere willingness to work as a pharmacy specialist, and communicating in English language. Selected supervisors urge the CHS to forge a strong linkage in order to review and assess the quality of the CHS graduates and establish a strict examination scheme that both parties (health sector and the CHS) can assess the progress of students starting from the first course of enrolling at the CHS.

**Quality of the College of Health Science Graduates
"Laboratory Technology"**

Elements	%	Comments
Lack of Organization Skills	65%	Large Volume of Medical Tests Results
Unaware of Lab. Test Methods	50%	Manual, Automated, Semi-Automated
Unaware of Routine & Special Tests	50%	Lack of Knowledge
Unaware of Types of Techniques	60%	The Principle of Flow Cytometry

1. Enzyme Linked Immunosorbent Assay (ELISA)
2. Indirect Immunofluorescence Test (IF)
3. Nephelometry
4. Radial Immunodiffusion (RID)
5. Immune Blot Techniques

Quality of the College of Health Science Graduates "Laboratory Technology"		
Elements	%	Comments
Lack of Analyzing why Rejecting Results	70%	Understanding Rejection Policy
Lack of Accuracy in Checking Lab. Tests	90%	Computer Data Skills
Inability to Access Information	60%	Patients Information, Computer Skills
Unsafe of Transferring Samples, Haemolysis	50%	Safety & Health Procedures
Lack of Interpersonal Skills	60%	Dealing with Doctors & Patients Frustration

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

It is essential that graduates from the College of Health Sciences, CHS, understand and absorb the concept of health care and understand crucial skills to ensure providing the best health care for patients, relatives, and the society. The accuracy of interpreting laboratory results is highly significant for patient's well-being, since 90% of graduates unable to use un-updated computer software for further analysis and interpretation of laboratory results. The research indicated that 70% of graduates lack understanding of a rejection policy for a laboratory test. Safety and health procedures are essential and critical in laboratory environments which expose to bacteria and viruses and other life threatening hazards. Graduates (50%), are required to carefully transfer laboratory sample to prevent any damage or causing interference with the originality and safety of the laboratory sample. Selected supervisors stressed on the need to enhance graduates with interpersonal skills that enable graduates to deal with work stress, cope with working in a dangerous environment, and managing doctors and patients' frustration. Indeed, there are essential skills that laboratory specialist must acquire such as organization and sorting laboratories request and results, in order to provide doctors with the needed test results in a safe and quick manner. However, 65% of graduates have not practice dealing with large number of laboratory tests neither they are able to organize and store laboratory documents in a special software. Graduates (50%) inability to differentiate between types of laboratory tests are notable by all selected supervisors at the health sector. When asked to identify each of the laboratory techniques (e.g., Enzyme Linked Immunosorbent Assay (ELISA), Indirect Immunofluorescence Test (IF), Nephelometry), 80% found unaware and unable to explain in details the different between those techniques.

Quality of the College of Nursing Graduates			Quality of the College of Nursing Graduates		
Elements	%	Comments	Elements	%	Comments
Lack of Health Care Concept	60%	Patients Care	Inability to Conduct Physical Exams	60%	Lack of Skills
Lack of Primary Care	65%	Lack of Skills	Inability to Record Patients History	60%	Lack of Knowledge & Skills
Irresponsibility	50%	Lack of Work Value	Inability to Listen Carefully to Patients	50%	Attitudes Manner
Lack of Medical Terms	60%	Hypotension, Cephalalgia	Constant Inquiry on Job Allowance	65%	Motive Analysis
Lack of Effective Communication	80%	English Language Skills	Lack of Work Ethics	55%	Dismissed Work Duties
Inability to Perform Basic Procedures	65%	Blood Test & Fitting Drip	Lack of Patients Counseling	65%	Lack of Knowledge, Skills, and Attitude
Unfamiliar with Medical Apparatus	75%	Lack Of Interaction With The Health Sector			

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

The research revealed that the majority of graduates (60%) from the College of Nursing, CN, lack essential knowledge related to the concept and importance of health care. This has negatively inflected on their responsibility towards patients (50%), and inability to perform a basic procedure (65%). The selected heads of nurses noted the inability of graduates to communicate properly (speaking & writing) in English language (80%) particularly when communicating with foreign doctors, nurses, and physicians. Selected heads of nurses have noted that graduates lack primary care for patients (65%), basic medical terms (60%), and unfamiliarity with medical apparatus and tools that are being used at the health sector (75%).

It is essential that nurses do conduct a physical exam for patients in a proper and safe manner. However, the majority of nurses seems unable to perform a physical exam (60%) nor to gather and record patient's history (60%). Communication with patients is significant so that information can be gathered and analyzed for further examination. The research indicated that 50% of the CN graduates have not showed apposite attitudes towards patients, especially when patients describe, in more details, his past and current illness. The inability of nurses (65%) in providing the right counselling to patients and relative is highlighted by the selected heads of nurses at the health sector. The concept of health care must be one of first priority of nurse's duty rather constant inquiry on which department that might offer a better allowance (65%).



Quality of the Institute of Nursing Graduates		
Elements	%	Comments
Lack of Health Care Concept	65%	Patients Care
Lack of Primary Care	70%	Lack of Skills
Irresponsibility	65%	Lack of Work Value
Lack of Medical Terms	70%	Hypotension, Cephalalgia
Lack of Effective Communication	80%	English Language Skills
Inability to Perform Basic Procedures	65%	Blood Test & Fitting Drip
Unfamiliar with Medical Apparatus	65%	Lack Of Interaction With The Health Sector

Quality of the Institute of Nursing Graduates		
Elements	%	Comments
Using Mobile Phone with Patients Present	60%	Work Ethics
Inability to Cope with Work Stress	55%	Lack of Skills
Inability to Access Patients Information	60%	Computer Skills
Refusing to Work with "Bed" Patients	75%	Attitude
Inability to Understand Doctors Writing	75%	Lack of Skills
Refusing to Work Night Shift	85%	Lack Of Work Value

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

The concept of health care must be thoroughly absorbing by those students attending the Institute of Nursing, IN. The absent of sincere willingness to provide health care to patients, relatives, community, and society would damage the reputation of the health care. The research revealed that 65% of students showed negative attitudes towards working at the health sector. The majority of students (70%) are using mobile phone while working and sometimes during conversation with patients, irresponsible behaviour (65%) towards patients waiting for treatments. As stated by two senior heads of nurses that “there are who tend to keep patients waiting for medical treatment and instead spending time for drinking coffee, having a snack, and chatting while gathering outside the building”. The lack of medical terms is noted among 70%, and heads of nurses stressed on the need to enhance students’ medical terms while attending the IN. The IN must ensure that graduates are acquired with patient’s primary care

skills since 70% are showed unproficiency in developing a relationship with patients, relative, community, and society. Indeed, communication in English either speaking or writing and both is highly significant and need exerted efforts to improve graduates' English skills since 80% of graduates have encounter difficulties in dealing with foreign doctors, nurses, and physicians. Regrettably, 65% of graduates unable to accurately to conduct basic medical procedures and 65% found to be unfamiliar with the medical apparatus and tools available at the health sector. It is well acknowledged that working at the health sector place a high pressure on medical staff to deal with normal and critical health conditions and working in a highly contaminated area. Therefore, graduates should be aware before enrolling at the IN that coping with work pressure is significant, since 65% of graduates showed inability to adapt to work pressure and stress. It is utterly not an option that graduates refuse to work at Intensive Care Unit (70%), or to reject working night shift (80%). Nurses are supposed to be ready to work under different circumstances to maintain highly quality services at the health sector. The selected heads of nurses stated that "graduate (70%) refusing to work in "bed" patients' wards is totally unacceptable", and inability to understand or interpret doctors hand writing is annoying. The graduates from the IN should have the proper training on how to use medical software's programs in order to access or retrieve patients' information since 65% lack computer skills in dealing with patient's information data. A significant matter which was discussed and investigated with the selected heads of nurses in major hospitals is the unacceptable attitude from the IN graduates (approximately 55%) who strongly rejecting or dislike receiving advice or orders from a foreign highly expert nurse in the same or other hospital wards. In fact, the health sector would only employ an expatriate nurse who has a highly credible qualification in nursing as well as extensive working experience. The negative attitudes towards rejection or disliking receiving orders or an advice from foreign nurses who spend years in hospitals and have a remarkable achievement in the health care is totally unacceptable. It worth mentioning that, there are 35% of those graduates from the IN who are newly employed at the health sector and at the same time wishes to drop out or joint a new career in completely different sector. Overall, selected heads of nurses unsatisfied with the quality of the majority of graduates from the IN, who employed five years ago until now at the health sector.

Quality of the Higher Institute of Energy Graduates			Quality of the Higher Institute of Energy Graduates		
Elements	%	Comments	Elements	%	Comments
Ready to Work with Machines & Tools	50%	Attitudes	Acceptable Level of Skills	45%	Lack of Skills
Ready to Work Outdoors	45%	Lack of Skills & Attitudes	Acceptable Level of Attitudes	40%	Lack of Positive Attitudes
Reliance on Contractors	100%	Contractor Agreement	Aware of Safety & Health Procedures	50%	Lack of Knowledge & Skills
Understanding Technical Terms	50%	Lack of Knowledge & Skills	Inability to Solve Technical Problem	85%	Lack of Skills
Lack of Effective Communication	35%	English Language Skills	Inability to Understand Technical Drawings	80%	Lack of Skills
Unfamiliar with Machines	100%	LED & Solar Energy	Inability to Understand Elec. Components	85%	Lack of Knowledge & Skills
Acceptable Level of Knowledge	45%	Lack of Knowledge			

Note: The above percentages are an approximate estimation obtained from the selected heads of supervisors at the Ministry of Electricity and Water and at the oil sector.

The research findings revealed that approximately 50% of those graduates who are already employed by the Ministry and Electricity and Water and at the oil sector five years ago until now, are not ready or unwilling to work with machines and tools and prefer to work in offices rather than workshops or laboratories. In fact, the selected heads of supervisors indicated that approximately 45% of those graduates are not keen to work outdoors especially at the summer season where the temperature record is very high. The graduates found to extensively depend on contractor workers (100%) who can bear the high temperature and complete work under difficult and hard circumstances. The selected heads of supervisors noted graduates clear lacking of technical terms (approximately 50%), and only approximately 35% who are able to communicate, speaking and writing, in an acceptable level of English language. Surprisingly enough, the selected heads of supervisor's stress on the need to enhance graduates' knowledge and skills in Light-Emitting Diode (LED), and Solar Energy (SE), since they have not showed any knowledge or skills in such widespread electrical technological systems and devices. The level of graduate's knowledge is rated by the heads of selected supervisors as an acceptable for only approximately 45% of the graduates, approximately 45% of graduates for the level of skills, and approximately 40% of graduates for level of positive attitudes. The issue of safety and health procedures and rules are essential since graduates would work in a hazardous working environment and the probability of accidents occurrence is very high and could be an expected. The HIE must ensure students are well aware of safety and health procedures and rules and must practice applying a high standard of safety and health precautions, since only approximately 50% of graduates showed a proper safety and health practice. It was also notable that graduates have not practice (approximately 85%) on solving possible technical problem that might occur while working with machine, devices, and tools related to their field of specialty nor understanding (approximately 80%) different technical drawings that are applied at the Ministry of Electricity and Water and at the oil sector. The selected supervisors have also noted graduates' unfamiliarity with specific electrical devices components (approximately 85%) that are related to their field of specialty.

Quality of Higher Institute of Communications & Navigation Graduates		
Elements	%	Comments
Lack of English Language Skills	95%	Lack of Skills
Lack of Microsoft Skills	75%	Lack of Skills
Lack of Safety and Health Procedures	75%	Lack of Skills & Attitudes
Inability to Solve Technical Problem	85%	Lack of Skills
Inability to Understand Technical Drawings	80%	Lack of Skills
Inability to Understand Elect. Components	70%	Lack of Knowledge & Skills

Quality of Higher Institute of Communications & Navigation Graduates		
Elements	%	Comments
Inability to Understand Power Station Sections	70%	Lack of Skills
Inability to Interpret Elect. Circuit Networks	65%	Lack of Skills
Lack of Technical Terms	55%	Lack of Skills & Knowledge
Unfamiliar with Fiber Optic	95%	Lack of Skills & Knowledge
Lack of Main Distribution Frame	65%	Lack of Skills & Knowledge
Inability to Understand Jumper Wries	75%	Lack of Skills & Knowledge

Note: The above percentages are an approximate estimation obtained from the selected heads of departments at the Ministry of Communications.

The above findings indicate, without doubt, that the majority (approximately 70%-95%) of those who graduates from the HIC&N lack significant skills related to their area of specialty. As expected, approximately 95% of the selected graduates lack English language skills, and 75% of the total unable to use Microsoft programs in an acceptable manner. Safety and health procedures and rules are essential since graduates would work in a hazardous working environment and the probability of accidents occurrence is very high and could be an expected. The HIC&N must ensure students are well aware of safety and health procedures and rules and must practice applying a high standard of safety and health precautions, since approximately 75% of the total ignore safety and health procedures and thus not using safety apparatus. It was also noted that 85% of the total unable to identify and deal with technical solving problems, approximately 80% of the total show unacceptable knowledge and skills in

reading or understanding electrical or technical drawings, and approximately 70% of the total are not familiar with electrical devices components. It is inevitable that graduates from the HIC&N would work in power stations and the need to enhance their knowledge and skills in the various aspects on the operations and possible hazardous involved must be considered as one of the HIC&N priorities. However, approximately 70% of the total selected graduates are not familiar with the electrical power station sections. When asked to evaluate the ability of graduates in interpreting electrical circuit networks, approximately 65% of the total were unable to describe in details the electrical circuit networks. In fact, approximately 55% of the total lack essential technical terms related to their area of specialty, and approximately 95% of the total completely unaware of what fiber optic components and contribution to the advancement of communications and information flow and exchange. In addition, approximately 65% of the total seems unaware of types of electrical distribution frames, and cannot differentiate between main distribution frame, MDF, and intermediate distribution frame, IDF. The lack of knowledge and skills regarding the meaning and function of main distribution frame, MDF, room is also notable by selected heads of departments at the Ministry of communications. Despite the importance of jumper wires (use with breadboards and other prototyping apparatus to easy replace a circuit when required), approximately 75% of the graduates are incapable to understand how much current a jumper wires handle nor having an idea about how much power can a breadboard can handle.



Quality of the Sabah Al-Salem Industrial Institute & Shuwaikh Industrial Institute Graduates

Elements	%	Comments
Lack of English Language Skills	95%	Skills
Lack of Technical Terms	75%	Lack of Skills
Inability to Understand Electrical Circuits	65%	Lack of Knowledge & Skills
Inability to Understand Electrical Boards	70%	Lack of Skills & Knowledge
Inability to Understand Elec. Components	55%	Lack of Skills & Knowledge
Unfamiliar with Machines & Devices	70%	Lack of Skills & Knowledge
Lack of LED & Solar Energy Knowledge	85%	Lack of Knowledge & Skills

Quality of the Sabah Al-Salem Industrial Institute & Shuwaikh Industrial Institute Graduates

Elements	%	Comments
Inability to write Short Technical Report	85%	Lack of Skills
Inability to use Recent Technical Software	100%	Lack of Skills & Knowledge
Neglecting Safety & Health Procedures	75%	Lack of Attitudes & Skills
Inability to Solve Technical Problem	85%	Lack of Skills
Inability to Understand Technical Drawings	80%	Lack of Skills
Constant use of Mobile Phones	90%	Lack of Attitudes

Note: The above percentages are an approximate estimation obtained from the selected heads of supervisors at the Ministry of Electricity and Water and at the oil sector.

It is essential that graduates are able to communicate in English language since the types of machines and devices have an operation and maintenance instructions written in English language. In addition to, the ability to communicate properly with foreign employees and

supervisors in work place. However, the research findings revealed that approximately 95% of the total selected graduates are below the acceptable standard in communicating in English language. This was worsening by the lack of technical terms (approximately 75% of the total) and the unfamiliarity with electrical circuit (65%) of the total selected graduates. When questioned to evaluate the ability of graduates in interpreting electrical circuit networks, approximately 65% of the total were unable to describe in details the electrical circuit networks.

Digital Circuit Boards is considered as an alternative to the circuit theory approach, stress on energy flow rather than just signal interconnection to explain logic circuit behavior. (Ralph, 2012) There are different type of digital circuit boards and approximately 70% of the total graduates are unaware of the types, importance, and function of Digital Circuit Boards. It was also noted that selected graduates lack significant skilled related to their field of specialty, such inability to identify electrical components (approximately 55% of the total), and unfamiliar with the electrical machines and devices availability of the recipients of the SSII & SII graduates. It was revealed that (approximately 85% of the total) were unfamiliar with the meaning of light-emitting diode (LED) and its efficiency (cost, lighting distribution range, types, degree of weather resistance and components), and unaware of solar energy (definition which is the transfer of sun and then converted into thermal or electrical energy, domestic, commercial, and industrial sites usages, cost, and limitation). It is part of graduate's skills to able to write and understand technical reports, however approximately 85% of graduates seem unable to write proper technical report. The use of computer software related to graduate's specialty is significant in enhancing their knowledge and skills and connect them with the world of new technology, since no strong evidence support their ability of graduates to apply new software to assess and enhance their competencies at work place. The issue of safety and health procedures and rules are essential since graduates would work in a hazardous working environment and the probability of accidents occurrence is very high and could be an expected. The SSII & SII must ensure students are well aware of safety and health procedures and rules and must practice applying a high standard of safety and health precautions, since only approximately 75% of graduates showed a proper safety and health practice. It was also visible that graduates have not practice (approximately 85%) on solving possible technical problem that might occur while working with machine, devices, and tools related to their field of specialty nor understanding (approximately 80%) different technical drawings that are applied at the Ministry of Electricity and Water and at the oil sector. The selected supervisors have also noted graduates' unacceptable attitudes since (approximately 90%) continuing using mobile phone at work.

6. Conclusions

There is no doubt that technical and vocational education would enhance students' knowledge, skills, and attitudes that are in most needed by industries and business. There is also a common understanding and agreement among authors, writers, and observers that technical and vocational education would facilitate the transmission of students from schools and colleges to work place. However, it is essential to stress that the success of technical and vocational education would depend, to great extent, on the quality of management. The fact is that managing a technical and vocational education is entirely different from managing a formal education (e.g., formal colleges and universities). In Kuwait, technical and vocational colleges and institutions, especially the selected colleges and institutions in this research, are managed, in most cases, by Ph.D. and Master degree holders who may lack crucial management skills particularly those related to managing a technical and vocational institutions. Normally, an assign committee would be formed to selected and evaluate a member of academic staff to hold

the position of the dean/manager of a certain college or institute. Bearing in mind, that the selected colleges and institutions in this research are in the area of health sciences, technological studies, energy, communications and navigations, electrical engineering, and electrical power stations. Therefore, it is investable that those who have been selected to manage a certain technical and vocational colleges and institutions may have a clear lack of managerial skills such: setting and evaluating the college or institute overall plan/action plan, setting criteria for assessing the quality of graduates, setting criteria's for evaluating field training programs, reviewing and updating curriculum, evaluating lecturers and trainers competencies, determining the current and future of industrial manpower requirements and competencies, updating laboratories and workshops to suit industrial requirements, applying safety and health protocols, ensuring proper and healthy learning and teaching environment, promoting research and development, negotiation skills with industries and business, marketing skills, problem solving skills, ability to close the gap with industries and business, ability to provide a tangible services to society, facilitating the transmission of graduates to workplace, ensuring the participation of industries and business in the colleges and institutions academic activities, and encouraging joint seminars and consultancy committees. It is well understandable that the current positions of technical and vocational colleges and institutions are occupied by those who may lack significant managerial skills and their specialty is in a completely different areas such as: health sciences, electrical engineering, communications and navigations, dental sciences, manufacturing engineering, and electronics engineering. As a consequent result, the ability to ensure the quality of learning and teaching and meeting industrial requirements would not be achieved through the enrollment in a short managerial training course where an attendance certificate would be issued to trainees for his/her attendance. In fact, there is no concrete evidence that those who manage technical and vocational colleges and institutions passes credible training courses nor have a creditable technical and vocational management qualifications and successful experience. It is worth mentioning that, even though those who have a management qualification would require to gain the necessary technical and vocational knowledge, skills, and attitudes that enable them to manage technical and vocational colleges and institutions. Technical and vocational is a dual type of educational system that require specific skills to successfully interact with industries and business and ensure that managerial and academic staff are well aware of the concept and notion of working in a technical and vocational institution. In a hospital for an example, a surgeon would not accept to set behind desk to review employees' papers jobs or solve their problems. Simply, because his/her place would be in an operation room conducting surgical operations and saving lives. Indeed, the surgeon will not abandonment or sacrifice his/her dream for the seek a managerial position.

The overall research findings confirmed, without any doubt that, the absent of concert evidence of a significant and effective participation with the recipients of PAAE&T graduates. The aim of the country is to reduce dependence on expatriates. However, this objective seems be out of reach, for the time being, since the selected colleges and institutions is not seriously forging a strong and a fruitful collaboration with the selected recipients of the PAAE&T graduates in various essential academic and practical activities. The clear lack of graduate's knowledge, skills, and attitudes is highly notable in this research. The management of the selected colleges and institutions must exert efforts to enhance the quality of its graduates and set a strict rules and requirements before accepting those who are willing to service at the recipients of the PAAE&T graduates. The PAAE&T must focus on the quality of graduates rather quantity so that tangible and satisfactory outcomes can be achieved. "The authority seeks to achieve... that meets the requirements of social and economic development in terms of **quantity and quality**, through its admission policy..." (The PAAE&T Vision & Mission

Statement) Therefore, unless the selected colleges and institutions thoroughly realized the importance of enhancing the quality rather than the quantity of graduates as well as forging a strong link with the recipients of the PAAE&T graduates, Kuwait would continue, without doubt, relying on expatriates for years ahead.

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